5 May 2020
Consolidated Agencies' Comments on the A-12 work plan

General Comments:

1. There is no discussion of water sampling to monitor this water at the outfall area. Please add to the document a sampling regime that can be refined in the post construction phase. Add the outfall to the spring/fall sampling plan. Add temperature and turbidity as well as all CERCLA COCs in the analysis.
2. The headquarters area is just below ODA's. A ditch through this area will need to be constructed in such a manner that water will not infiltrate through potentially contaminated soil. Additionally, the ditch must be constructed with berms high enough that surface runoff will not enter the ditch and co-mingle with the clean pond water.
3. There is a backfilled pit (E-Pit) just east of the outfall area. Have you looked at the outfall area to determine what direction the water will flow once it leaves the pipe/ditch? Efforts must be taken to ensure the water does not flow into the pit.
4. A site walk should be performed to look at field conditions. In terms of hydrology, how much extra water will be sent drainage through the ditch? How much water naturally accumulates in this area from large storm events? Please include these calculations.
5. The proposed outfall area must be assessed for suitability to accept and contain the proposed outfall.
6. Are there cattle trails in this area? If the water hits a cattle trail it could create a head cut that may be nearly impossible to contain.

Specific Comments:

1. **Page 2, Section 2.2, third paragraph, first sentence**. EPA agrees that upgradient spring-fed ponds are the main sources of water to the A-12 pit. However, we suspect there is also subsurface groundwater flow from upper ponds that will not be intercepted by proposed surface water diversion alternatives and continue to feed A-12 Pit. Pipeline invert elevations in the Upper Pond set at Elev 5740 will maintain a year-round reservoir water surface that will continue to feed Pond 2 and the A-12 Pit. Pond 1 has separate drainage area not included in Figure A – Drainage Area. Therefore Pond 1 will continue to feed Pond 2 and the A-12 Pit. The volume of subsurface groundwater flow has not been determined and would require a field investigation to measure the transmissivity of soils below the Upper Pond and between the Upper Pond and the lower ponds. EPA believes the A-12 project will meet its stated objective of diverting surface water flows around contaminated soils. That is useful and worthwhile, but additional work may be needed to address subsurface flows. Post-construction monitoring will be important to measure the impact of the project on contaminant loading to the A-12 pit.
2. **Page 2, Section 2.2, third paragraph, fourth sentence**. Please provide the invert elevation of the CMP pipe that currently carries overflow from the Upper Pond to Pond 1.
3. **Page 3, Section 2.4, first paragraph:** Were any survey monuments located? DOI requires all monuments to be surveyed and replaced.

4. **Page 3, Section 3.0, second paragraph, last sentence on page:** Do not use adjectives "low concentrations" or "slightly". Revise throughout the document.
5. **Same sentence:** What does "general water quality guidelines" mean? State the water quality guidelines specifically.
6. **Page 3, same section, first paragraph, first sentence:** Do not use the word "elevated" without showing the concentrations.
7. Same Section: The design is required to detail how overflow from larger events will be captured and where the water will be routed.
8. **Page 4, Section 4.1:** Annual inspections may not be appropriate. Include a discussion that outlines procedures for inspections after precipitation events that meet or exceed the approved design criteria or rain on snow event occurs.
9. **Same Section:** Plans are for excavated soil to be stockpiled along the length of the pipeline and ditch or adjacent to the pipeline and ditch, then graded to drain and blend with existing topography. Soil excavated adjacent to ODA's or in an area of suspected or confirmed runoff from ODAs must be sampled for COC's known or suspected at the site. Appropriate measures must be taken during if using for grading as to not cause further contamination.
10. **Page 4, Section 4.1, first paragraph.** The basis for choosing a pipe, a rock-lined ditch, and an unlined ditch should be described here. Is slope the defining factor that dictates the type of infrastructure? If so, what are the cutoff points? For example, if slope is >5% use pipe, between 2% and 5% use lined ditch and <2% use unlined ditch. This could make sense but doesn't appear to be the case – if anything, the ditch appears to be steeper than the pipeline based on the profile provided on Figure 4. If the defining factor is the potential for the water to pick up contaminants or for infiltration to generate contaminated shallow groundwater, soil contamination data in each of the three sections should be summarized and references provided to the relevant data report(s). Same comment applies to Section 4.2.
11. **Page 4, Section 4.1, first complete paragraph, first sentence:** STA 33+85 does not appear on any figure. Revise the necessary figure(s).
12. **Page 4, Section 4.1, third paragraph, second sentence**. Identify minimum cover over HDPE pipe at maintenance road crossings.
13. **Page 5, Section 4.1, fourth paragraph, third sentence:** Rock-lined ditch to include "geotextile" – woven or unwoven? Geotextile class? Please revise with these details.
14. Same Section: Was consideration given to lining ditch to prevent stormwater infiltration into ground and reduce seepage into A-12 Pit? Please discuss.
15. **Page 5, Section 4.2:** It is understandable to want to initiate flow with a pipeline then move to having water flow in a lined ditch. The pipeline should be buried at an adequate depth to avoid vandalism. At what depth will the pipeline be buried? Please include this detail in the work plan.
16. Same Section: Provide detail on the inlet and outlet structures. They will need to be maintained on a regular basis to keep trash from building and to ensure free flow into and out of the pipe system and designed to prevent vandalism to the extent practicable.

17. Same Section: At the point where the pipeline converts into the lined ditch, what design will you use to slow the velocity of the water? Will rock rip rap be enough to reduce erosion impacts to the designed ditch? Please discuss.
18. Same Section: With the amount of overburden to the north of the HQ, there may be contributing factors of contaminants currently free flowing as runoff along the railroad tracks through Headquarters. Currently, spring run-off flows along the north side of the railroad tracks to an area where the railroad arc straightens out. Would the runoff co-mingle with water in the ditch? Please discuss.
19. Same Section: There is a high point at that arc and it is unclear if the ditch would allow for water to continue to the discharge point or flow east into the pit close to the railroad tracks. Please discuss.
20. Same Section: The ditch should be lined all the way to the designated outflow point, however, if the final approved design allows for an unlined ditch, the soils on these unlined areas portions should be tested to determine if there are any sources of contamination in those areas.
21. **Page 6, Section 4.2, first paragraph:** STA 14+93 does not appear on any figure. Revise the necessary figure(s).
22. **Same Section, second paragraph:** You discuss plugging the outlet, why not remove the outlet and reshape the area? It is unclear why the outlet pipe would remain. Please discuss.
23. **Page 6, Section 6.0.** What was the justification for maintaining the 2-foot freeboard for 50-year event?
24. **Page 6, Section 6.0:** There are conceptual drawings for the pipe and outfall. It is unclear where the outfall is located, what it would look like, how it would drain etc. Would the water infiltrate or would it continue to flow and create a wetland environment? What soil sampling or geotechnical analysis have been performed to determine that the water, once it leaves the pipe/ditch, will flow to create a wetland and not simply infiltrate? Please revise with this information.
25. **Figures:** Alternative A & B & Extended Ditch Plan and Profile: Please use colorful lines to describe the layout/layouts. Change colors from pipeline to ditch to lined ditch etc.
26. **Figure 5:** In general, EPA prefers Alternative B because of the relatively straight alignment. However, we are worried about the section of pipe proposed to run west / northwest along the road separating the Upper Pond from the lower ponds. It appears the pipe would then cross another road before heading west and into the ditch at the eastern end of the railroad tracks. Are these roads still in use? If yes, will the pipe be buried beneath the roads and is there any concern for heavy vehicle traffic over the pipe crossings? Please discuss.
27. **Figure 7**: Details should also be provided for the pipe inlet, the ditch outlet at Dry Hollow, and the transition points from pipe to rock-lined ditch and rock-lined ditch to unlined ditch. There is no typical cross section for the unlined ditch, which the text says will be "upgraded." How deep will it be? Will the soil be compacted? Slope of sides? Also, a typical detail for a pipe clean-out should be provided. Revise with this information.

28. **All Tables:** Express samples in mg/L. Revise all tables.
29. **All Tables:** Add the screening values to all columns for all constituents in the tables.
30. **Appendix A**. The photos are very helpful. Please add photos of the discharge point in Dry Hollow and the receiving water (stream?) downgradient. Photos of the existing ditch that will be upgraded would also be helpful.
31. **Appendix B.** Do the calculations all assume no snow (only rainfall on bare or vegetated ground)? A rain-on-snow event should be considered, if it can be modeled.
32. **Appendix B:** The Tribes are not in favor of using SmartDitch at the site. From observations at other sites, extremely labor intensive to keep cleaned out.
33. **Appendix B:** NRCS SSURGO Database (NRCS 2012) soils in the area are silt loams, categorized as Hydrologic Soil Group B. According to the Gay Mine PSR soils in the area also include Highams- gravely loams. The soils in the outfall should be sampled to confirm the hydrologic properties.
34. **Appendix B:** 3 inches of sand needs to be deeper especially with any fractured rocks. This will prevent the pipe from getting holes in it in the future.
35. **Site Layout Map:** How much water is expected to fill the low area at the point of discharge? Have calculations been performed to ensure that the water at the discharge point will not inundate Dry Hollow Road? There is very little free board for water to exist in this area without impacting the road. It is possible that Dry Hollow Road may become overwhelmed with water. It is possible that and the Dry Hollow Road may need to be moved uphill anywhere from an estimated 200-300 feet in elevation. What calculations have you performed for how much water will be re-routed and how much water this area will be able to receive?